

The Zest Podcast - S7E4

Transcription

[00:00:00] **Tie Liu, Ph.D:** Most of the vegetable after harvest is still alive. That's kind of like surprising, right? Because they're, they're still are able to breathe and, and lost moistures, and those, uh, really can trigger the decay process.

[00:00:14] **Dalia Colón:** I'm Dalia Colon, and this is The Zest. Citrus, Seafood, Spanish Flavor, Southern Charm. The Zest celebrates cuisine and community in the Sunshine State.

[00:00:24] The struggle is real. I'm talking about keeping produce fresh, but today, help is here.

[00:00:37] Moldy raspberries, mushy avocados, that slimy bag of kale. Today we're getting advice for how to keep produce fresh. My guest is Dr. Tie Liu, an assistant professor in the University of Florida's horticultural sciences department. He addresses common conundrums like where to store tomato's, how to keep bananas from browning so quickly, the bane of my existence, and a better way to shop for herbs.

[00:01:07] Today we're talking about how to keep produce, fruits, vegetables, herbs, fresh, and I posted on Facebook that I would be speaking to you and I now have a Google Doc with three pages of questions for you. So this is a really hot topic, and I apologize if we don't get to anyone's question, but clearly people have a lot to say about this. I spoke to your IFAs colleague a few months ago, Dr. Maria Portelos-Romero about how to save money on groceries. So before we even talk about how to keep produce fresh, do you have any general tips when we're at the grocery store to prevent this food waste on the front end?

[00:01:50] **Tie Liu, Ph.D:** Yeah, that's, that's, um, really, uh, great questions because I'm actually teaching an undergrad course, um, uh, fighting food waste and loss.

[00:01:58] So, uh, in general speaking, uh, it's really important to prevent this happening. For instance, if you go to a grocery store, you can generate a smart shopping list. So those are helping you kind of reduce the, the vegetable and, and fruit that you purchase from the store. And then that's really can also help you reduce number of vegetable you're gonna buy from the store.

[00:02:20] So, and then once you are purchased to those, uh, vegetable in store, then either, um, consume that sooner or, uh, don't keep the vegetable in the refrigerator for a very long time.

[00:02:33] **Dalia Colón:** Okay. Consuming it sooner is always good. I have half a bag of brussel sprouts in my refrigerator right now, but they're not my first choice.

[00:02:40] I don't want to eat them. There's always something I want to eat sooner than that. But let's go through some of these questions that people wrote in with. Shelly wants to know in general what should go in the refrigerator and what should stay on the counter?

[00:02:53] **Tie Liu, Ph.D:** So that's, you know, depending on what type of vegetable and fruit, a lot of, uh, fruit can be, uh, stored in the fridge.

[00:03:01] But certain type of vegetables and those, those are, uh, particularly in in sub, subtropical or tropical fruit or vegetable, they're actually very sensitive to the cold condition, which is when enter the chilling condition, they will develop chilling injury. So, for instance, you, you see some of the squash if you store for a few days and they will develop those dark spots or, or liquidish.

[00:03:25] Those really can, can trigger the decay, uh, some other, uh, vegetable, or fruit, for instance, like tomato. It's uh, when you fridge those tomatoes actually, they reduce the flavor, so they, you'll probably have ideas when you keep the tomato in the fridge for a few days and then they just don't taste like, you know, regular tomatoes.

[00:03:44] It's, it's lost their flavors. In general, a lot of, uh, berries you can store in the refrigerators, strawberries, or, or blueberries, but some, uh, vegetables like squash, like I mentioned earlier, tomatoes, or, you know, even banana, probably not a good idea to keep in the fridge. Uh, that's also can devolve those, uh, chilling symptoms.

[00:04:05] All right.

[00:04:05] **Dalia Colón:** Let's go through some other questions. My colleague Daylina Miller, as well as Stephanie and Lauren, we got a lot of questions around rinsing or not rinsing. Should we rinse? When should we rinse? How do we dry the produce? Can you talk about that?

[00:04:22] **Tie Liu, Ph.D:** Yeah. So rinsing is also, uh, it is, it's a tricky because when you rinsed or, or wash the vegetable, fruit, they also, uh, increase moistures or humidities for vegetable, fruit. And those humidities can, um, basically it's a favorable condition for, for pathogen to grow.

[00:04:42] However, some vegetable food, they're, they're ready, kind of dirties or has been applied by pesticide. So that would be a good way, actually, you washed it, before you put into the refrigerators. If you washed it, then you should wrap it into a paper towel or reduce those moisture conditions or some of the vegetable for.

[00:05:02] You don't, you don't wash them until you kind of ready to eat, so then you can have different, different way to store them.

[00:05:09] **Dalia Colón:** This is so tricky because you want it to be convenient to make the healthy choice. So if I put pre- rinse apples and grapes in my fridge, I'm more likely to eat it. My family's more likely to eat it if it's like a whole chore to, to rinse it right, when we're ready to use it, I may not eat it at all.

[00:05:27] **Tie Liu, Ph.D:** Yeah, exactly. So, so that's, I think it's, if you are ready to eat it, then maybe it's good to to wash them right before you put it in the fridge. Um, but don't keep them for longer time in, in the refrigerators.

[00:05:40] **Dalia Colón:** And I know what you mean about certain foods. You do wanna wait until you're ready to use them.

[00:05:45] I'll give you an example. I packed my kids lunches for school the night before, but. I prep the strawberries in the morning because strawberries get kind of slimy and not very appealing after they've been rinsed and sitting for a while. Do you have any other advice on berries? You touched on this earlier, but how do we keep them from getting moldy and slimy?

[00:06:07] Yeah.

[00:06:07] **Tie Liu, Ph.D:** Berries, you know, is different. For instance, if you want something very tasty and fresh, maybe it's good just purchase from the farm's market that's, uh, has very, um, relative store shelf life, but it's usually, uh, much tastier than, than the one you purchase from the grocery store. But once you purchase from for instance, grocery store, um, you may have different way to storage the, for, for instance, some of the better, you can separate them in the different part of the refrigerator.

[00:06:38] A lot of the berries we purchased, they are actually in the climate shelves. So that, so that means they're, they're already being separated. So in other words, don't mix the, those vegetable and fruit together because certain fruit or vegetables are sensitive to temperatures or se sensitive to, uh, other, uh, conditions.

[00:06:57] **Dalia Colón:** Okay. You talked about maybe storing the berries on their own and not mixing them with other produce. How should we store them? Amy and my colleague, Jessica Meszaros had some thoughts on, should we be using Tupperware, plastic wrapped, Ziploc bags, beeswax, foil? What do you do? If, if I'm going to the grocery store with you and you've got your bag of fruits and vegetables, you take them out, and then what do you do from there?

[00:07:25] **Tie Liu, Ph.D:** Yeah, I think it's, it's important to, to separate them in, you know, put in the different part of the refrigerator. Um, for instance, the bottom of the fridge, you have those, uh, chambers for vegetable and fruit. That would be a good place to, to, to keep them.

[00:07:39] **Dalia Colón:** You brought up the drawer, the chamber at the bottom of the refrigerator that's set aside for fruits and vegetables.

[00:07:46] And we got a lot of, this was a hot topic. Um, Wendy called it the drawer of death. My colleague Kerry Sheridan called it the rotter. I think Wendy called it the drawer of death because she's a nutritionist and a dietician I happen to know. And when people put things in there, they don't see it and then they end up not eating it and it goes bad, so, so what is the point of that drawer?

[00:08:10] And is that really the best place to get us to eat the fruits and veggies?

[00:08:14] **Tie Liu, Ph.D:** You know, the drawers is, it's a very good place to separate vegetable and fruit, uh, from other groceries because certain vegetable and and fruit you don't wanna put together because they some fruit, what we call, um, clary fruit or non clary fruit.

[00:08:32] Those is usually because if they're, um, sensitive to plant hormone we call ethylene, those ethylene actually is promote ripening and. Decay process. So certain vegetable, if you mix together, they actually can promote their decay process. Cer certain type of vegetable should use the bottom drawer to celebrate them, uh, because they help to reduce the mixture of the vegetables together

[00:08:57] **Dalia Colón:** What's an example of a fruit or vegetable that would cause the others to ripen? Because maybe could we just put all of those together, like quarantine them in the drawer and let the rest of 'em hang out in the main part of the fridge?

[00:09:09] **Tie Liu, Ph.D:** Yeah. So that's, you know, certain, um, fruits for instance, those, those berries, uh, grape usually is a non-climate fruit.

[00:09:17] So that means they, they don't ripen after harvest from the plants. A certain vegetable when you harvest, they actually slowly ripen and become more mature. You know, one example is the bananas, right? You, you purchase, usually it's a green banana, but then later on they become yellow. And because that's continue, even after harvested, they are continue ripen and they release those hormones to promote their ripening process.

[00:09:44] Uh, so that means if you, if you mix those banana with other type of vegetable fruit you make in promoting their ripening process.

[00:09:54] **Dalia Colón:** Let's talk about bananas because this is the bane of my existence. I buy it on Monday, it's green, and on Wednesday it's brown. I've tried buying them in different stages, like picking a few off of the bunch, a couple green, a couple yellow, a couple, a little bit brown, but I feel like they just turn so quickly and I'm, I can't make any more banana bread or smoothies.

[00:10:16] Do you have any advice for keeping bananas under control.

[00:10:21] **Tie Liu, Ph.D:** I think that, you know, a lot of people use, for instance, wraps to, to wrap those banana, uh, you probably notice a lot of, uh, banana you purchase from store. They're harvesting area they already wrapped, and so you either use a, um, plastic wrap or other type of wrap.

[00:10:38] So that's a really good way to reduce their, um, senescence or deterioration time. And that's also helping.

[00:10:46] **Dalia Colón:** That's a good tip. So again, it's about mimicking what we see the grocery store doing, cuz obviously they're the experts. Okay. Another one is avocados. They go from hard as a rock to mushy, like overnight.

[00:11:00] So what do we do about that?

[00:11:01] **Tie Liu, Ph.D:** Yeah, avocado is, um, is a tropical fruit. Um, so, so, so that means also pretty sensitive to chilling conditions. Uh, so we don't usually keep them, uh, refrigerated.

[00:11:12] **Dalia Colón:** Ray wrote in and said that when his avocados are starting to get a little bit soft, he refrigerates them to slow it down.

[00:11:20] So that's a good thing.

[00:11:20] **Tie Liu, Ph.D:** But it would have to be in like shorter time. Yeah.

[00:11:35] **Dalia Colón:** Marty wants to know, do organic and or local fruits and vegetables last longer?

[00:11:41] **Tie Liu, Ph.D:** Usually the, the opposite, the, the local or organic market they harvest, uh, when they almost fully rip. So that means their, their taste usually better. Uh, however, because they're already rip, so they uh, have relatively short shelf life.

[00:11:57] So then you have to either consume them right of way or have very short, uh, storage time.

[00:12:04] **Dalia Colón:** So how often do you grocery shop? Because if we did all of this, I feel like we would be going to the store every other day.

[00:12:11] **Tie Liu, Ph.D:** Yeah, exactly. I think I usually once a week for, for shopping, you don't have to purchase everything, but some of the vegetables can keep it in a refrigerator for a couple days.

[00:12:22] That's usually pretty good. Um, some fresh strawberries or blueberry probably you want to eat like within a two or three days. So that's also, you know, pretty good.

[00:12:32] **Dalia Colón:** Have you heard of this jar method? Kiva wrote in about this, and also Donna, it's where you cut up the vegetables, so maybe carrot sticks or celery, and you put them in a jar filled with water and use them as you need them.

[00:12:46] Does that actually do anything?

[00:12:48] **Tie Liu, Ph.D:** I think, you know, jar could be a good way for storage some dried fruit. Uh, for instance, if you slice those apple and let 'em dry and then keeping the jar, and that would actually keep the fruit for a long, longer time. But those jar is still unless the, you know, oxygen's in it and then the vegetable and still continue losing moistures.

[00:13:10] And so, so that means they're not gonna slow down their, uh, process, even you store in a, in a jar,

[00:13:18] **Dalia Colón:** man. So that's just one of those TikTok trends that's a bunch of bologna. Yeah. Speaking of the moisture, what do you think about those produce washes that you can buy that are specifically targeting washing produce?

[00:13:31] **Tie Liu, Ph.D:** Yeah, I think wash is good for reduced, uh, food spoilage or reduced the pesticide contamination. So that's, if you kind of concern the pesticide or chemicals, uh, not healthy for consumption, that I think it's important to maybe wash them away. Uh, those use, you can use vinegars or you can use salt water to wash in general, but then again, if you wash them in basically, uh, increase in the humidity conditions and then actually can triggers other plant pathogens rolling in those vegetables and fruits.

[00:14:02] **Dalia Colón:** You brought up humidity. I'm from Ohio and now I live in Florida and I do feel like food spoils faster here. I had a couple come up to me recently, they're from up north and they said, is it just us or do things not last as long on the counter here? So how does Florida's climate contribute to all of this.

[00:14:21] **Tie Liu, Ph.D:** Well, I think as the humidity condition, definitely can accelerating their decay process. You know, for instance, because most of the vegetable through the after harvest, they're still alive. That's kind of like surprising, right? Because they're, they're still able to breathe and, and loss moistures, and those, uh, really can trigger the decay process.

[00:14:42] So imagine if those temperatures are higher or more humid conditions that actually can, can accelerating those, those process. So, so I think it's, you know, heat definitely is a problem to increase their decay process.

[00:14:56] **Dalia Colón:** So I'm not crazy. Is there anything we can do about that?

[00:14:59] **Tie Liu, Ph.D:** You know, I think it's colder temperature.

[00:15:02] Um, or when you harvest those, uh, vegetable from storage right away or use colder treatment, for instance, a lot of broccoli or, or produced locally or, or shipped from other places that actually they enter, uh, Hydroco Condit. , those are actually, um, put either, uh, ice slice around those broccoli to keep their temperature down quickly are really helping, uh, reduce their or slow down their, uh, SNAs or deterioration process.

[00:15:32] So those, um, treatments, it's definitely very helpful for transportations or, or storage.

[00:15:37] **Dalia Colón:** Speaking of transportation and storage, Sandy asked, is your produce really fresh in the first place? Because big warehouses, store fruits and veggies in a nitrogen rich environment, she said for up to a year or longer, I can't verify that, but are they doing things to manipulate the product so that it's not really what it would've been if we just picked it right out of the garden?

[00:16:01] **Tie Liu, Ph.D:** I personally didn't hear their use nitrogen, high conditions for storage. Um, I do visit a couple of packing house or harvesting areas. Uh, those places normally have a lot of, uh, cooling chambers. Just keep those vegetable in, in the large refrigerators and then keep everything there for. Longer time and even during their processing, uh, for instance, packagings or bagging those vegetable food, they're all under the very cold conditions.

[00:16:32] So, so that means they're, uh, keep their temperature lower and then so then they keep the vegetable and food fresh. I think that's their general practice.

[00:16:40] **Dalia Colón:** What are your thoughts on frozen fruit? A lot of those commercials say our, our fruit is frozen fresh. It's fresher than what you'd get at the grocery store.

[00:16:49] Do you buy anything frozen?

[00:16:51] **Tie Liu, Ph.D:** Yeah. Uh, yeah, definitely. You know, a lot of, uh, peas and or frozen strawberry and, and blueberry. They actually, you know, when you make smoothies or making cake, I think just, just as tastes as good as, uh, fresh.

[00:17:04] **Dalia Colón:** And Velva had a good tip because a lot of times if it puts something in the back of the fridge, it freezes.

[00:17:10] Even a salad or something will freeze if you put it in the back. But she has a heavy duty, washable, lazy Susan that's designed for the fridge. And so she can constantly rotate what's in the front and what's in the back, and I thought that was a great idea. Okay. Just a couple more questions. I wish you could come to my house and just help me every day, but do you have any specific advice around herbs?

[00:17:32] Short of having an herb garden, how can we have fresh herbs on hand?

[00:17:38] **Tie Liu, Ph.D:** Yeah, that's a good, good question. Herb's actually very sensitive to chilling conditions. So for instance, you probably don't wanna fridge read it for a while. And for instance, bazos are very, uh, cold sensitive. So I think the best way is maybe it's by the fresh or even you can have your little, uh, herb gardens.

[00:17:58] That doesn't have to be like a giant. Area, but some grocery store selling the baso in the pot or some herb in the pot so that you ha you only need a small amount of those herbs and for, for either seasonings or maybe why not? Why not just grow them fresh so they eat them fresh?

[00:18:16] **Dalia Colón:** Yeah, it's a better value probably.

[00:18:18] Sarah wants to know what are the pros and cons of leaving vegetables peeled or unpeeled? So maybe carrots or eggplant. Does it go bad faster if we peel it or if we buy it already peeled and chopped?

[00:18:32] **Tie Liu, Ph.D:** Yeah, so definitely there have problems and, and counts. For instance, a lot of peel vegetables, so maybe they are easy to get oxidized.

[00:18:40] So those are basic, you looser nutrients. For instance, a lot of vitamins or chemicals actually sensitive to oxidization, so they actually looser to nutrition there. . However, in some people will only eat those vegetables actually precut it, right? Because they're fast and you know, sooner you can eat them and that's the only condition they can eat because don't have time to, you know, process in those.

[00:19:02] So I think there's a lot of, um, prey and accounts for precut it vegetable fruit for, for different type of vegetables.

[00:19:10] **Dalia Colón:** You talked about smoothies. What are some other ways to use up the fruits and vegetables that are on their way out? They're at deaths door.

[00:19:18] **Tie Liu, Ph.D:** Yeah. I think definitely make smoothies is, is a good way to reduce waste and loss.

[00:19:24] Um, for instance, some of you have extra, uh, fruit or vegetables. You, you're, you are not gonna eat or, or consume right of way or they override the mushroom of fruit, but they. No, not taste a bad, so maybe might not just make smoothies or make some, you know, liquid ish and drinks and, and that would've helped to use those vegetable and fruit rather than to throw away.

[00:19:44] **Dalia Colón:** Sure. Freezing it. Soups, of course, are also good. Stews where they're sort of disguised. Yeah. And I've heard for herbs you can chop them up and put them in, uh, like an ice cube tray with oil and freeze it. And then when you need a little bit of cilantro or basil, you have that ready to go.

[00:20:02] **Tie Liu, Ph.D:** Huh. That's interesting.

[00:20:04] I, I learned it from you.

[00:20:06] **Dalia Colón:** Okay, good. We're learning from each other. All right, last question is from Janet Keeler, and she says, this is a psychological question. Why do we buy produce and let it shrivel and rot in the fridge? Does hope Spring eternal that we're going to cook and eat veggies every night of the week?

[00:20:22] What happens to our resolve? So are we just being unrealistic about how many vegetables we'll actually eat?

[00:20:28] **Tie Liu, Ph.D:** I think that's really, you know, waste a lot because planning to buy vegetable food is really critical. Um, because. kind of tend to buy extra, right? Food or vegetables. And, and then also depending on what time you are going grocery shopping, for instance, you, if you're really hungry, that would be probably, you usually over purchase more than you need it.

[00:20:50] And those conditions really can, you know, get more vegetable improved. That gonna goes to waste.

[00:20:55] **Dalia Colón:** So we have to be realistic about who we are. Yeah. If we know, if we know we're gonna get takeout three days a week, we shouldn't buy. The huge bag of salad.

[00:21:05] **Tie Liu, Ph.D:** Yeah, exactly. You know, reduced numbers or, uh, budget or planning.

[00:21:09] Have a smart shopping list. I think that's always helpful.

[00:21:12] **Dalia Colón:** Well, this has been really interesting and helpful. Are there any other tips you'd like to share?

[00:21:17] **Tie Liu, Ph.D:** I think is food waste and loss is a really, really big challenge. It's also globally, it's really important, especially when I teach this, my, my course.

[00:21:26] And then I, uh, a lot of my students, um, you know, either have smart shopping way or how they're reduced a number of shopping and then they even consider, for instance, in the university dorm, they should have smaller trees for smaller portion. So those are really, I think it's important. Um, I think it's critical to let people aware of the problem and find solution to reduce waste and loss and, and then to, you know, reduce those, uh, contamination. And it's really good for our environment. It's also good for human and, and all the societies.

[00:21:59] **Dalia Colón:** How did you become interested in this topic and why are you so passionate about it?

[00:22:03] **Tie Liu, Ph.D:** I'm, you know, um, core culturist so is, I love plants and, and, and different type of plants have different ways and vegetable and fruit and those are, uh, very different tastes. And, but they also have different feature for, for different SNAs or, or deteriorations. Uh, so understanding those are, are really critical questions and helping to people reduce food waste, reduce loss, and then, and, and think develop, uh, our society more sustainable.

[00:22:35] I think it's important. and really, uh, critical questions to answer.

[00:22:39] **Dalia Colón:** Hmm. If you don't mind my asking, where did you grow up and is there a fruit or vegetable that we should all try maybe from your childhood?

[00:22:48] **Tie Liu, Ph.D:** I grew up in, in China, so there's a lot of Asian fruit and vegetables and um, for instance, in Florida there's a lot of Asian market and a lot of tropical and subtropical fruit actually only produced in Florida, for instance, uh, light cheese or some dos, one of another probably, uh, people even never heard of the, the fruit and, and vegetables actually very tasty. Um, even they have very stinky smells, but they're unique flavors. They also have pretty, um, unique nutritional levels.

[00:23:19] And those are really, uh, kind of unique.

[00:23:21] **Dalia Colón:** Very cool. It's always fun to go to the market and try something new. Dr. Tlu, thank you so much.

[00:23:25] **Tie Liu, Ph.D:** Thank you so much for the opportunity. We appreciate it.

[00:23:29] **Dalia Colón:** Tie Liu is an assistant professor in the University of Florida's horticultural sciences department. If you're looking for ideas on how to use up all those fresh fruits, veggies, and herbs, you'll find lots of great recipes on our website, thezestpodcast.com.

[00:23:46] I'm Dalia Colon. I produce the Zest with Andrew Lucas and Chandler Balkcom. The Zest is a production of WUSF Public Media. Copyright 2023. Part of the NPR Network.